

CLAIMS

1. A surgical guidewire, comprising:
a wire having a length extending along a longitudinal axis and a generally rectangular cross-section having a first longitudinal edge and a second longitudinal edge, the wire twisting helically around the longitudinal axis for at
5 least a section of the length of the wire.
2. The surgical guidewire of Claim 1, wherein the wire is formed from a kink-resistant material including Nitinol, stainless steel, titanium or other metallic or polymer alloy having spring wire characteristics.
3. The surgical guidewire of Claim 1, wherein the helical configuration of the wire enhances at least one of torquability and pushability of the wire.
4. The surgical guidewire of Claim 1, wherein the amount of twisting or pitching of the wire varies over at least a portion of the wire.
5. The surgical guidewire of Claim 1, wherein the amount of twisting or pitching of the wire remains constant over the entire length of the wire.

6. The surgical guidewire of Claim 1, wherein the dimensions of the first and the second longitudinal edges vary over the entire length of the wire or over different sections of the wire.

7. The surgical guidewire of Claim 1, wherein the twisted wire has a diameter varying from about 0.010" to about 0.060".

8. The surgical guidewire of Claim 1, wherein the length of the wire varies from about 100 cm to about 200 cm.

9. The surgical guidewire of Claim 1, further comprising at least another wire helically twisting around or together with the first wire.

10. The surgical guidewire of Claim 9, wherein the at least another wire has a cross-section having a round, an oval, a square, a triangular, a rectangular, a pentagonal, a hexagonal or any multisided shape:

11. The surgical guidewire of Claim 1, further comprising a second wire helically twisting together with the first wire around the longitudinal axis.

12. The surgical guidewire of Claim 11, wherein the second wire has a generally rectangular cross-section having a first longitudinal edge and a second

longitudinal edge different from the first longitudinal edge and the second longitudinal edge of the first wire.

13. The surgical guidewire of Claim 11, wherein the second wire has a generally round cross-section.

14. The surgical guidewire of Claim 11, wherein the second wire has a generally triangular cross-section.

15. The surgical guidewire of Claim 11, wherein the first and the second wires are held together by the sheer force of being twisted together around the longitudinal axis.

16. The surgical guidewire of Claim 11, wherein the first and the second wires are affixed or attached together.

17. The surgical guidewire of Claim 11, wherein the first and the second wires are affixed or attached together by spot gluing or soldering.

18. The surgical guidewire of Claim 11, further comprising a coating over the entire guidewire or over a portion of the first and the second wires.

19. The surgical guidewire of Claim 11, wherein the entire guidewire or a portion of the first and the second wires is coextruded with plastic.

20. The surgical guidewire of Claim 1, wherein the wire further comprises a tip.

21. The surgical guidewire of Claim 20, wherein the tip is grinded or tapered before twisting to further enhance flexibility or steerability.

22. The surgical guidewire of Claim 1, further comprising a tip spring mounted at a distal end of the wire.

23. A surgical guidewire, comprising:
a first wire having a first cross-section and extending along a longitudinal axis; and

a second wire having a second cross-section extending along the
5 longitudinal axis,

wherein the first wire and the second wire are helically twisted together around at least a section of the longitudinal axis.

24. The surgical guidewire of Claim 23, wherein the helical configuration of the first and the second wires enhances torquability while maintaining flexibility.

25. The surgical guidewire of Claim 23, wherein at least one of the first and the second wires is a kink-resistant wire formed from Nitinol, stainless steel, titanium or other metallic or polymer alloy having spring wire characteristics.

26. The surgical guidewire of Claim 23, wherein the first and the second cross-sections of the wires are generally round.

27. The surgical guidewire of Claim 23, wherein the first and the second cross-sections of the wires are generally similar in at least shape and size.

28. The surgical guidewire of Claim 23, wherein the first and the second cross-sections of the wires are generally different in at least shape and size.

29. The surgical guidewire of Claim 27 or Claim 28, wherein the shape includes any geometric shape including circular, oval, square, triangular, rectangular, pentagonal, hexagonal or any multisided shape.

30. The surgical guidewire of Claim 23, further comprising at least a third wire helically twisting around or together with the first and the second wires.

31. A surgical guidewire, comprising:
a first wire having a first cross-section and extending along a longitudinal axis; and
a second wire having a second cross-section,
5 wherein the second wire is twisted around at least a section of the first wire.

32. The surgical guidewire of Claim 31, wherein at least one of the first and the second wires is a kink-resistant wire formed from Nitinol, stainless steel, titanium or other metallic or polymer alloy having spring wire characteristics.

33. The surgical guidewire of Claim 31, wherein the first and the second cross-sections of the wires are generally similar in at least shape and size.

34. The surgical guidewire of Claim 31, wherein the first and the second cross-sections of the wires are generally different in at least shape and size.

35. The surgical guidewire of Claim 33 or Claim 34, wherein the shape includes any geometric shape including circular, oval, square, triangular, rectangular, pentagonal, hexagonal or any multisided shape.